Space Weather Forecast

Issued on Monday, 03 January 2022 at 00:53 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Slight chance of G1/Minor storms on 03 January. Slight chance of moderate solar activity until 04 January.

Analysis of Space Weather Activity over past 24 hours
Solar Activity: Solar activity has been low, with only two common-class flares, from a region which has now rotated over the northwest horizon. Two regions remain on the disc, one is the southwest is relatively large but inactive, with a further small, weak and fading region close to the centre disc. No Earth-directed CMEs (coronal mass ejections) were observed on available imagery.

Solar Wind / Geomagnetic Activity: Solar winds have fallen from elevated to slightly elevated levels today, as a solar fast wind steadily declines. Total magnetic field strength was generally moderate, but weakened for a time. The important north-south component varied weakly throughout. Geomagnetic activity has been Quiet to Unsettled (Kp 1-3).

Energetic Particles / Solar Radiation: No solar radiation storms were observed.

Four-Day Space Weather Forecast Summary
Solar Activity: Low or very low solar activity is forecast, with the main risk of activity from the region in the southwest quadrant.

Solar Wind / Geomagnetic Activity: No Earth-directed CMEs are forecast. Solar wind speeds are expected to return to background levels by 04 or 05 January, with no further enhancements expected. Geomagnetic activity is expected to be mainly Quiet to Unsettled with a slight chance of Active intervals on 03 January. Mainly Quiet intervals are then expected from 04 January.

Energetic Particles / Solar Radiation: No solar radiation storms are expected.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	10	1	1	1
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	10	5	1	1
Very Active	R3 to R5 X	No	3	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	5	5	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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